

JAPANESE [JP,10-021348,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL FIELD PRIOR ART EFFECT OF THE
INVENTION TECHNICAL PROBLEM MEANS DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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CLAIMS

[Claim(s)]

[Claim 1] It has the slider which follows in footsteps of insert and remove of a card with an electrode pad, and reciprocates. The contact guide slot of the owner bottom which extends in the above-mentioned reciprocation direction which shows this slider lower part to the contact projected part of contact is prepared. While having prepared the through tube for the above-mentioned slider reciprocating *****(ing) the above-mentioned contact projected part at the pars basilaris ossis occipitalis of the above-mentioned contact guide slot, releasing the above-mentioned **** near the termination of ****, and permitting **** to the above-mentioned card electrode pad of the above-mentioned contact projected part The breaker style of a card with an electrode pad, and contact characterized by having prepared puncturing for releasing the above-mentioned **** to extent to which the above-mentioned contact projected part does not project from the above-mentioned slider upper part near double-acting termination.

[Claim 2] It has the slider which follows in footsteps of insert and remove of a card with an electrode pad, and reciprocates. The contact guide slot of the owner bottom which extends in the above-mentioned reciprocation direction which shows this slider lower part to the contact projected part of contact is prepared. While having prepared the through tube for the above-mentioned slider reciprocating *****(ing) the above-mentioned contact projected part at the pars basilaris ossis occipitalis of the above-mentioned contact guide slot, releasing the above-mentioned **** near the termination of ****, and permitting **** to the above-mentioned card electrode pad of the above-mentioned contact projected part Puncturing for releasing the above-mentioned **** to extent in which the above-mentioned contact projected part does not project from the above-mentioned slider upper part is prepared near double-acting termination. The breaker style of a card with an electrode pad, and contact characterized by constituting so that the free-end point of the above-mentioned contact may engage with the pars basilaris ossis occipitalis of the above-mentioned contact guide slot in this release condition.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the breaker style of the card with an electrode pad and contact which controlled contact in a card and contact and contact discharge with the electrode pad which holds IC etc. by the slider which is interlocked with the insert and remove of a card and reciprocates.

[0002]

[Description of the Prior Art] By inserting the card 1 with an electrode pad (memory card) which contains IC in the socket of electronic equipment, such as a personal computer and a word processor, and contacting contact 4 to the above-mentioned electrode pad 3 prepared in this card face, as shown in drawing 5 The approach of recording on a card the information which connects the inside IC of a card to the information processing circuit in these electronic equipment, and gives the information which the inside IC of a card holds to the information processing circuit in electronic equipment, or the information processing circuit in electronic equipment holds is performed.

[0003] As a means to control contact in the electrode pad 3 and contact 4 and discharge of these cards Form the slider 5 which follows in footsteps of insert and remove of a card, and reciprocates, and the contact guide slot 10 of the owner bottom which extends in the above-mentioned reciprocation direction which shows this slider to the contact projected part 7 of contact is formed. While changing the contact projected part 7 of the above-mentioned contact 4 into a **** condition on the base of the contact guide slot 10 at the time of reciprocation of this slider 5 and forming a contact discharge condition with a card Elastic restoration of the above-mentioned contact projected part 7 is carried out through the through tube 13 prepared in the edge of the guide slot 10 in near the termination of **** of a slider 5, and the pressurization contact to the electrode pad 3 of a card is made to achieve.

[0004] The above-mentioned slider prevents effectively the damage on in [IC / 2] the electrode pad accompanying ***** and repeat insert and remove for the contact projected part of contact carrying out pressurization sliding of a card face or the electrode pad front face in the stroke of the insert and remove of a card, or a card as much as possible.

[0005]

[Problem(s) to be Solved by the Invention] However, although the contact projected part of contact **** to the guide groove bottom side of a slider and repeats reciprocation (insert and remove of a card) of a slider in the state of this **** in the breaker style of the above-mentioned contact If continuously big stress joins contact by **** at the time of card un-inserting and it is left for a long period of time, while causing elastic degradation of contact and plastic deformation, the force to the base where contact of a connector is held is also added greatly, and causes connector deformation.

[0006] This invention aims at solving this problem appropriately with a simple configuration.

[0007]

[Means for Solving the Problem] As the means, puncturing for releasing the above-mentioned **** to extent in which the above-mentioned contact projected part does not project from

the above-mentioned slider upper part was prepared the termination of the double action of the above-mentioned slider, i.e., near the start edge of ****.

[0008] The above-mentioned contact has the elastic strip which extends in the reciprocation direction of a slider, prepares the above-mentioned contact projected part in the free edge of this elastic strip, and eases the stress which holds the above-mentioned contact projected part in the above-mentioned puncturing, and joins an elastic strip in near double-acting termination.

[0009] Moreover, in order to make it the above-mentioned contact projected part not project from the above-mentioned slider upper part in this condition, the means of you making the guide groove bottom side in which the form and magnitude of the above-mentioned puncturing were adjusted, or the above-mentioned puncturing was prepared incline according to the free edge of an elastic strip, and making it engaged etc. is employable. Or much more positive protrusion prevention is attained by considering as a configuration to which the above-mentioned free-end point engages with the above-mentioned contact guide groove bottom side.

[0010]

[Embodiment of the Invention] Drawing 1 thru/or drawing 3 are drawings having shown one example of this invention. Drawing 1 is the perspective view having shown the internal structure of the card connector which constitutes a contact breaker style. A of drawing 2 R> 2 is the top view of a slider, and B is the inclination Fig. which looked at the slider from the inferior-surface-of-tongue side. Drawing 3 is a Y-Y sectional view in drawing 2 A. Drawing 4 is the Y-Y sectional view in drawing 2 A having shown other examples of this invention.

[0011] In drawing 1 thru/or drawing 4, 1 is a card with the **** appearance flat at a rectangle shown in drawing 1, this card 1 holds the memory device slack IC 2, and the electrode pad 3 is juxtaposed by the card face. Moreover, a card 1 can also be used as the card which has only a circuit closing motion function only with the electrode pad 3 which does not hold the above IC 2.

[0012] It is the contact which 4 corresponded with the electrode pad 3 of the above-mentioned card 1, and has been arranged, and 5 is a slider which follows in footsteps of insert and remove of the above-mentioned card 1, reciprocates, and controls contact in the above-mentioned electrode pad 3 and contact 4, and contact discharge.

[0013] Contact 4 consists of the electric conduction strip by which bending was pierced and carried out from the metal plate, has the elastic strip 6 in the end side, has the contact projected part 7 which **** to the electrode pad 3 of the above-mentioned card 1 to the free end of this elastic strip 6, and has the terminal strip 9 connected with the wiring circuit board 8 which forms some or all of an information processing circuit in an other end side further with soldering etc. A majority of these contacts 4 are installed in the direction which extends in the reciprocation direction of the above-mentioned slider 5, and intersects perpendicularly with this reciprocation direction. In addition, the wiring circuit board 8 is electrically connected with the information processing circuit in electronic equipment by the connector 15.

[0014] On the other hand, it reciprocates, and you releases a contact projected part 7 and you makes it it **** to the electrode pad 3 of the above-mentioned card 1 in near the termination of ****, extending in the reciprocation direction in a front-face side on the other hand, and the above-mentioned slider 5 having the contact guide slot 10 installed in the reciprocation direction and the direction which intersects perpendicularly which counters with the contact, accepting the above-mentioned contact projected part 7 in this contact guide slot 10, and regulating a location. [many]

[0015] As the slider 5 which drawing 1 thru/or drawing 4 show the example made to serve a double purpose as a card tray which receives a card 1 and carries out location regulation of the above-mentioned slider 5, and is shown in drawing 1 thru/or drawing 4 is shown in drawing 1 It has the front reliance 12 which the first transition of the near ruler 11 which regulates the side edge of a card 1, and a card 1 contacts. A card 1 is inserted into the tooth space formed by this near ruler 11 and the front reliance 12, and **** of the slider 5 which

follows card first transition in footsteps of card insertion in contact with the reliance 12 before the above is obtained, and double action is made to perform extraction of a card 1 for a slider 5 conversely. At the time of reciprocation of the slider 5 which follows in footsteps of insert and remove of the above-mentioned card 1, the contact projected part 7 of contact 4 consists in the above-mentioned contact guide slot 10, forms a contact discharge condition with the electrode pad 3, and forms said contact condition in near the termination of ****.

[0016] A spring means performs double action of the above-mentioned slider 5, or it carries out double action of the slider 5 by the ejection actuation device 19, and is made to perform the above-mentioned card extraction and contact discharge.

[0017] Moreover, the hole 13 penetrated to the another side front-face side (inside of a card acceptance tooth space) of a slider 5 is formed near ***** of the contact guide slot 10 established in the slider 5 in drawing 1 thru/or drawing 4, the contact projected part 7 is wide opened in this through tube 13, and **** to the electrode pad 3 of a card 1 is permitted in that stability.

[0018] In addition, the contact projected part 7 attached the arrow head 14 which shows a card 1 in the location in the condition of not inserting, and shows the path of insertion further, in order that, as for drawing 1, a slider 5 might show clearly the condition of being wide opened in the through tube 13, in the termination location of ****.

[0019] Moreover, in drawing 3 and drawing 4, the condition that A has a slider 5 in the start edge of ****, the condition which B has in the middle of ****, and the condition that C is in the termination of **** are shown, respectively.

[0020] As it ** and is shown in each A [of drawing 3 and drawing 4], and B and C, when a card 1 is inserted, card first transition is made to **** both the push sliders 5 for the front reliance 12. It slides the contact projected part 7 of contact 4 ****(ing) on the base of the contact guide slot 10 by this ****, and elastic restoration is carried out in the through tube 13 of ***** (drawing 3 B, drawing 4 B), pressurization contact is carried out and the so-called busy condition of a card is formed in the electrode pad 3 of a card 1.

[0021] Next, if double action of the slider 5 is carried out that extraction of the card 1 should be carried out, it slides the contact projected part 7 of contact following progress contrary to the above, and ****(ing) it on the base of the contact guide slot 10, carries out elastic restoration in the puncturing 16 which consists in double-acting termination, and projects the crowning of the contact projected part 7 into this puncturing 16. The standby condition which does not use a card in this condition is formed.

[0022] As mentioned above, in the example of drawing 3 and drawing 4, when a slider 5 is in a double-acting edge, it is released from **** to the guide slot 10 by projecting in the puncturing 16 the contact projected part 7 of contact 4 was dug by whose slider 5 by penetrating. The amount of displacement of the contact projected part 7 in this case to the upper part is controlled by supporting the elastic strip free end by the ramp 17 of a guide slot, and does not project from the top face of a slider 5.

[0023] It supports by this ramp 17, and also a pawl 18 is formed in the point of the elastic strip free end, and the amount of displacement of the contact projected part 7 is controlled by the example of drawing 4.

[0024] The example which the contact structure of the electrode pad 3 of a card 1 and contact 4 inserts a card 1 into electronic equipment alone, and is formed, and the example formed through the connector of the **** card 1 dedication shown in drawing 1 consist.

[0025] The former is the case where prepare and place contact 4 and a slider 5 into the card socket of electronic equipment, make a slider 5 **** with the card 1 inserted in this socket, and the electrode pad 3 carries out pressurization contact of the contact projected part 7 in near the termination of ****.

[0026] Moreover, the latter is the case where form said pressurization contact condition, insert this card connector in the card socket of electronic equipment, and connection between a card and the circuit in a device is aimed at, by forming the card connector of the dedication equipped with a slider 5 and contact 4 in the flat card hold case where it has a card socket like drawing 1, inserting a card 1 into this case, and making a slider *****. That

is, this invention can be carried out as a means to open and close connection of a card and a connector, in order to form an electrical circuit.

[0027]

[Effect of the Invention] According to the breaker style of this invention, the stress by **** of a contact projected part is eased by puncturing near the termination of the double action of a slider, and elastic degradation of the contact at the time of standby, plastic deformation, or deformation of a connector is prevented. And since [in which a contact projected part does not project from the slider upper part in this relaxation condition] a variation rate is controlled like, contact on a card is prevented and card insertion can be performed convenient.

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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

[Drawing 1] Drawing 1 is the perspective view showing the internal structure of the card connector which forms the contact breaker style of this invention.

[Drawing 2] Drawing 2 is drawing having extracted and shown the slider used in the example of drawing 1 , and A is a top view and the perspective view which looked at B from the inferior-surface-of-tongue side.

[Drawing 3] Drawing 3 is a Y-Y sectional view in drawing 2 A, and the condition that A has a slider 5 in the start edge of ****, the condition which B has in the middle of ****, and the condition that C is in the termination of **** are shown, respectively.

[Drawing 4] The condition that drawing 4 is the sectional view having shown other examples of an operation gestalt of the breaker style of this invention, and A, B, and C are in the termination in the middle of the start edge of **** of a slider 5 like drawing 3 , respectively is shown.

[Drawing 5] Drawing 5 is the end view having shown the breaker style of the conventional example, and A and B show the condition of being in the start edge and termination of **** of a slider 5, respectively.

[Description of Notations]

- 1 Card
- 2 IC
- 3 Electrode Pad
- 4 Contact
- 5 Slider
- 6 Elastic Strip
- 7 Contact Projected Part
- 8 Wiring Circuit Board
- 9 Terminal Strip
- 10 Contact Guide Slot
- 11 Near Ruler
- 12 Front Reliance
- 13 Through Tube
- 14 Arrow Head Which Shows Card Path of Insertion
- 15 Connector
- 16 Puncturing
- 17 Ramp of Guide Slot
- 18 Pawl

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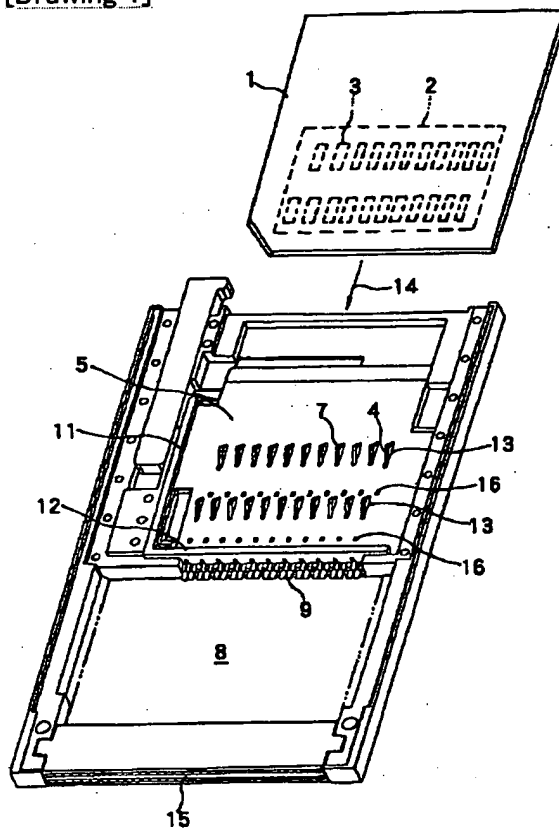
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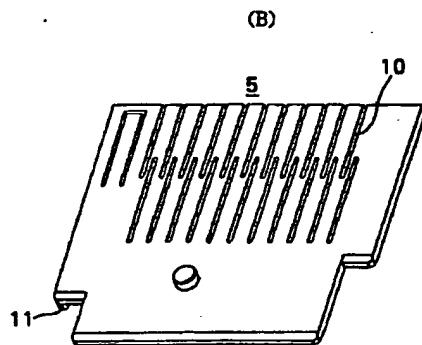
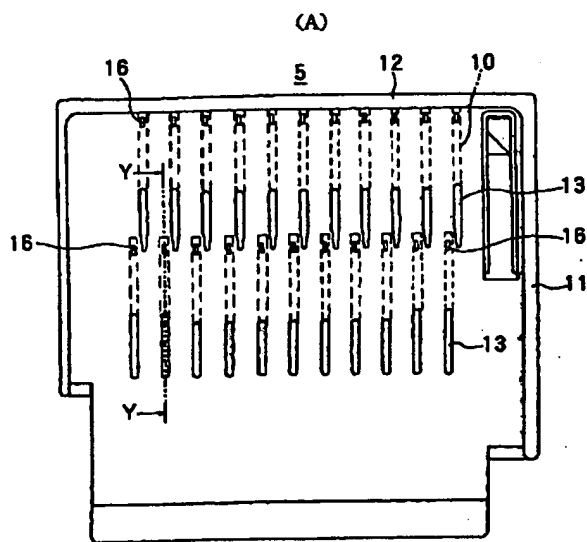
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DRAWINGS

[Drawing 1]

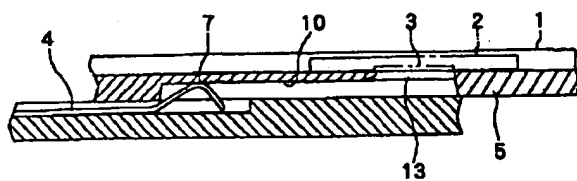


[Drawing 2]

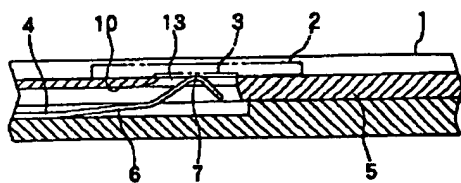


[Drawing 3]

(A)



(B)



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